

## REMARKS

Enclosed herewith is a fee for consideration of the IDS filed February 16, 2011. Consideration of the IDS is respectfully requested. In claim 15, line 10, the word “substituted” has been changed to “substituent.”

Claims 1-4, 6-11, and 14-17 stand rejected under §112, first paragraph, basically in that claims 1, 14, 15 and 16 include new matter since they contain the phrase “to provide a boehmitic alumina to convert to an alpha phase only at a temperature of above 1350°C.” Applicants respectfully submit that the phrase in question was fully disclosed. Original claim 8 used that exact language. Accordingly, it is respectfully submitted that the rejection under §112 is moot.

Claims 1-4, 6-11, and 14-17 stand rejected as obvious over Koch (U.S. Patent 3,152,865) in view of Noweck (U.S. Patent 6,773,690). The rejection is respectfully traversed. The thrust of the Examiner’s rejection is that Koch teaches all of the steps save for conducting the aging at a temperature between 120 and 150°C. To cure this apparent infirmity, the Examiner relies on Noweck which, in the Examiner’s position, teaches a process of making boehmitic aluminas wherein a metallic or non-metallic oxide or oxide hydrate is present in the hydrothermal aging process that requires an aging process at a temperature between 40 and 240°C. The Examiner thus concludes that it would have been obvious to modify the Koch process to use a metallic or non-metallic oxide or oxide hydrate in the Noweck hydrothermal aging process. The alleged suggestion or motivation to do this would be to make crystalline boehmite aluminas.

To begin with, it is respectfully submitted that the Examiner is misreading Koch. The only portion of Koch which has any possible relevance to Applicant’s invention is

the second embodiment, the other embodiments disclosed by Koch have no relevance.

Thus, and with respect to the second embodiment, in column 4, lines 13-26, Koch states:

A second embodiment employing the improvements provided by the present invention involves hydrolyzing aluminum alcoholate with water, separating the hydrous alumina from the alcohol, and recovering the alumina from its aqueous slurry. This hydrolysis can be conducted at a temperature in the range of about 32° to 100° F (= 0° to 37.7°C). The chelating agent in stabilizing amounts is generally incorporated in the water and thus is in contact with the resultant alumina monohydrate as it is formed. Here again, the alumina monohydrate is substantially stabilized against aging, is not unduly subjected to conditions promoting aging when a high purity product is desired, and is usually dried and calcined according to known procedures (underlining and parenthesis added).

Thus, as can be seen from the above:

- Koch teaches a different temperature for hydrolyzing not to exceed 37.7°C (100°F).
- Koch teaches to avoid aging and does not teach an aging temperature.
- Koch does not teach that the additive is a carboxylic acid having at least one additional substituent, wherein the at least one additional substituent is selected from the group consisting of oxo- and amino groups. Oxalic acid and tartaric acid disclosed by Koch are chelating agents but are not additives in the sense of the present invention. As the Examiner is doubtless aware, a chelating agent will have two coordination sites of the same nature such as oxalic acid and tartaric acid both of which have two -COOH groups.

Thus, as can be seen from the above the Koch reference, in its only relevant embodiment, is totally different from Applicant's process.

Nor does Noweck cure the infirmities of Koch. Thus:

- Noweck fails to teach the use of any of the additives set forth in present claim 1.
- Noweck teaches a hydrolyzing temperature that is contrary to Koch (60-100°C).
- Noweck teaches using an aging step that Koch expressly wishes to avoid.

As can be seen from the above, the process of Koch and Noweck are so different from one another (just as they are both different from Applicant's invention) that they cannot be combined in any logical fashion.

The Examiner's proposed combination is contrary to the law. In *In re Wada and Murphy*, Appeal No. 2007/3733 (January 14, 2008) the Board said:

When determining whether a claim is obvious, an examiner must make "a searching comparison of a claimed invention – *including all its limitations* – with the teachings of the prior art" *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). Thus, "obviousness requires a suggestion of all limitations in a claim" *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) citing *In re Royka*, 490 F.2d 981, 985 (CCPA 974). Moreover, as the Supreme Court recently stated, "there must be some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness." *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Circ. 2006) (emphasis added).

Contrary to the mandate of *In re Wada and Murphy*, the Examiner has not articulated, with some rational underpinning, why as to the second embodiment of Koch referred to above, and the only one that is remotely related to Applicant's invention, the skilled artisan would use a hydrolyzing temperature, as taught by Noweck of 60-100°C which is much higher than the highest hydrolysis temperature which Koch employs. Indeed, one looking at the Koch embodiment 2 and seeing the desired hydrolysis

temperature would not look to Noweck since Noweck teaches a much higher hydrolysis temperature. The difference between 37.7°C, the highest temperature suggested by Koch and 60°C, the lowest temperature suggested by Noweck, are hardly overlapping or even close.

Applicant wishes to point out that in the Kai Dölling Declaration there was a comparative example which basically compared the combined processes of Koch and Noweck with Applicant's process. As noted in the Declaration on page 2, using Applicant's invention and specifically tartaric acid, a much higher alpha conversion temperature was realized. Furthermore, in Applicant's specification, the Example 1, there is shown the use of various additives such as lactic acid, L-aspartic acid, L-serine, and L-lucine, all of which provide alumina with conversion temperatures in excess of 1350°C. To the extent the Examiner doubts this representation, Applicant is prepared to present a supplemental Declaration of Mr. Dölling verifying the above.

Lastly, Applicant notes that claim 16 requires an additive comprising a carboxylic acid group and an amino group and there is absolutely no hint in any of the references to use such an additive. Without in the least admitting that any of Applicant's claims are obvious, it is abundantly clear that claim 16 is patentable.

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims are in condition for allowance, which is hereby earnestly solicited and respectfully requested.

Respectfully submitted,

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